Programmatic Environmental Assessment for the Draft Revised Management Plan for the Monitor National Marine Sanctuary

Prepared by:

Office of National Marine Sanctuaries
National Ocean Service
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

February 2012

TABLE OF CONTENTS

Introduction

1.0 PURPOSE AND NEED ……5

1.1 NEED FOR ACTION ……5
1.2 PURPOSE FOR TAKING ACTION ……5

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES ……9

2.1 ALTERNATIVE 1 – NO ACTION ……9
2.2 ALTERNATIVE 2 – PROPOSED ACTION ……9

3.0 AFFECTED ENVIRONMENT ……10

3.1 BIOLOGICAL AND PHYSICAL ENVIRONMENT ……10
3.2 SOCIOECONOMIC ENVIRONMENT ……11
3.3 MARITIME HERITAGE AND CULTURAL ENVIRONMENT ……12

4.0 ENVIRONMENTAL CONSEQUENCES ……14

4.1 ALTERNATIVE 1 – NO ACTION ……14
4.2 ALTERNATIVE 2 – PROPOSED ACTION ……14
4.3 COMPARISON OF ALTERNATIVES ……18
4.4 CUMMULATIVE IMPACT ……19

5.0 LIST OF PREPARERS ……20

5.1 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION ……20

6.0 REFERENCES ……21

Introduction

Monitor National Marine Sanctuary (MNMS or sanctuary) was designated the nation's first national marine sanctuary in 1975. The site protects the wreck of the famed Civil War ironclad USS *Monitor*, best known for its battle in 1862 with the Confederate ironclad CSS *Virginia* at Hampton Roads. It is located approximately 16 miles southeast of Cape Hatteras, North Carolina and consists of a column of water one mile in diameter extending from the seabed to the surface, centered on the shipwreck.

The National Oceanic and Atmospheric Administration (NOAA) Office of National Marine Sanctuaries (ONMS) manages the sanctuary and would revise the current MNMS Management Plan consistent with the purposes and policies of the National Marine Sanctuaries Act (NMSA) and the statutorily-required management plan review (MPR) process established in section 304(e) of the Act. The NMSA requires periodic updating of the sanctuary management plans to re-evaluate site-specific goals and objectives and to develop management strategies and activities that ensure that sanctuary management continue to best protect sanctuary resources and qualities.

The current MNMS management plan was adopted in 1992. Since then, new challenges and opportunities have emerged, necessitating a revision of the management plan. NOAA proposes to update MNMS management plan strategies and activities and the site goals and objectives. The MPR process was initiated in December 2008 with scoping meetings held in Hatteras, N.C., Manteo, N.C., Raleigh, N.C., Morehead City N.C., as well as one meeting in Newport News, Va. Input from the public informed the development of the MNMS draft management plan, which is the subject of this programmatic environmental assessment (PEA). The analysis concludes that the proposed action would result in net beneficial effects to the environment, and that the beneficial effects are not expected to be significant, as defined by the National Environmental Policy Act (NEPA) and the implementing regulations. The draft management plan and draft PEA will be released for a 60-day public comment period.

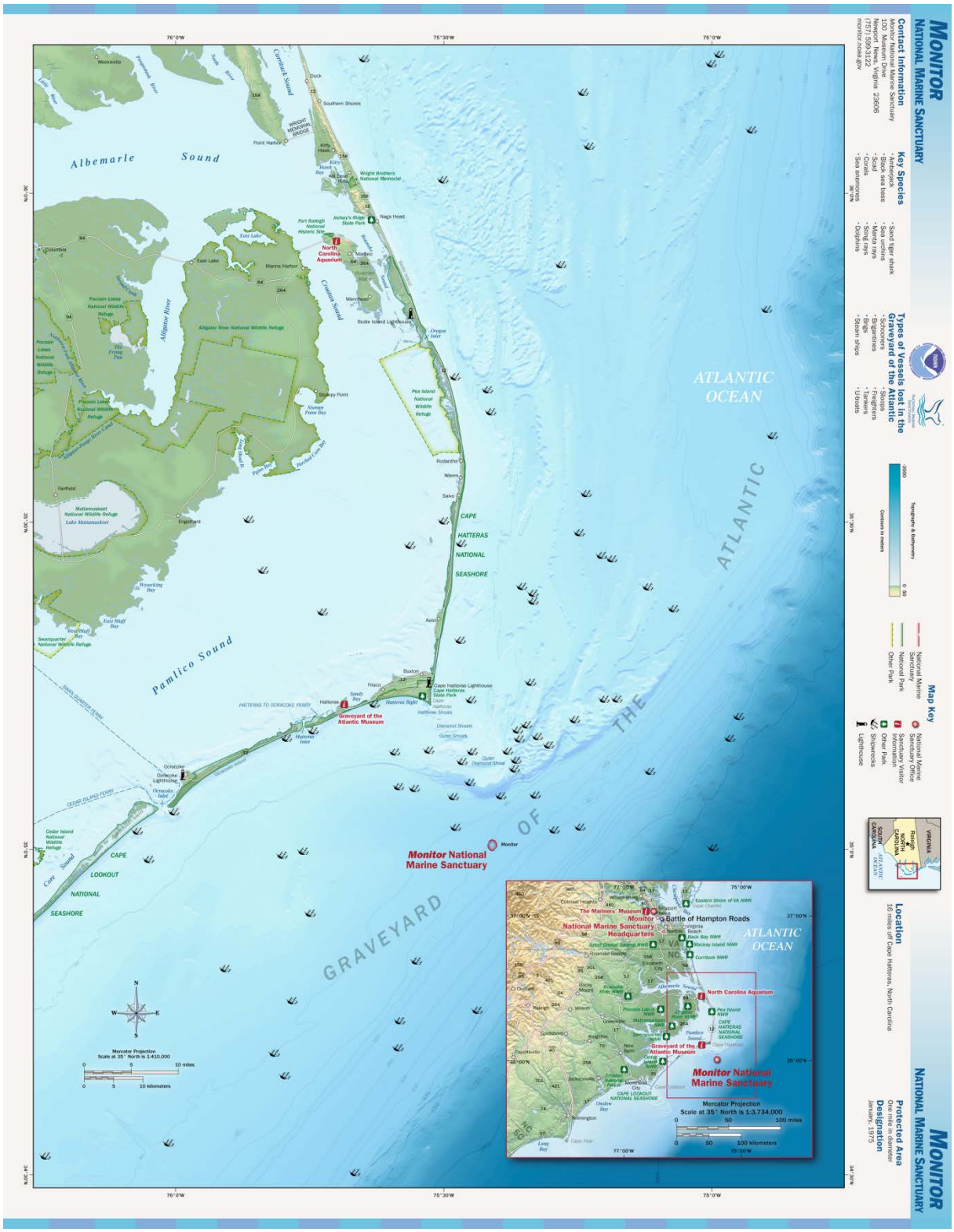

Figure 1: Monitor National Marine Sanctuary

1.0 PURPOSE AND NEED

A programmatic environmental assessment (PEA) is a useful tool to understand the environmental consequences of the broad range of activities proposed under the draft management plan for NOAA's Monitor National Marine Sanctuary (MNMS). The PEA provides the general analyses to inform the decision of approving the MNMS draft management plan. It also establishes that as individual actions become ripe for decision, alternatives will be evaluated under the National Environmental Policy Act (NEPA) to meet the broader goals outlined in this draft management plan.

1.1. Need for action

A revised MNMS management plan is needed to reflect changing management approaches to protecting the sanctuary's resources. Much has changed since the 1992 Monitor Sanctuary Management Plan. The 1992 plan pre-dates recovery of major sections of the wreck. The site itself has changed significantly, as has the management philosophy. Rather than a focus on recovery and artifact collection, management is now focused on *in situ* monitoring and research. Public comments during scoping identified eight priority issues, which have been developed into action plans as part of this draft revised management plan. These include: improving resource protection including identifying options for increasing access to the sanctuary for non-research purposes; providing for expanded and integrated education and outreach programs; providing an expanded program of on-site archaeological research; increased resource monitoring; identification of the two U.S. sailors remains recovered from the *Monitor* in 2002; improving conservation of *Monitor* artifacts; exploring expansion of the existing site to protect additional cultural resources located in the waters adjacent to the Monitor National Marine Sanctuary; and an action plan focusing on operations and administration. Awareness of these new issues affecting sanctuary management and the fulfillment of many of the prior plan's objectives necessitates the revision to the management plan.

1.2. Purpose for taking action

ONMS serves as the trustee for a system of 14 marine protected areas, encompassing more than 150,000 square miles of ocean and Great Lakes waters. ONMS manages the national marine sanctuaries through the authority of the National Marine Sanctuaries Act of 1972 (NMSA; 16 USC §1431 *et seq*.).

The NMSA authorizes the Secretary of Commerce to designate discrete areas of the marine environment as national marine sanctuaries based on their special conservation, recreational, ecological, historical, scientific, educational, cultural, archaeological, and aesthetic qualities which give them special national, and in some cases international, significance.

ONMS fosters public awareness of marine resources and maritime heritage through scientific research, monitoring, exploration, education, and outreach, and works closely

with its many partners and the public to protect and manage sanctuaries. Sanctuaries protect biologically diverse marine environments, water quality, and maritime heritage resources, while maintaining recreational and commercial activities that are sustainable and compatible with long-term preservation.

NMSA section 304(e) requires that each of the national marine sanctuaries periodically engages in a management plan review process to reevaluate site-specific goals and objectives and to develop management strategies and activities to ensure the sanctuary best protects its resources. This revised management plan provides an integrated program of resource protection, research, education, and interpretation. The plan outlines comprehensive management objectives that have been revised and expanded, based upon new knowledge of the site and upon new opportunities for research and education. This plan defines a framework for continued resource protection and preservation, as well as for an expanded program of on-site research that will contribute to the basic store of knowledge regarding this unique resource. MNMS goals and objectives provide the framework for developing management strategies. The goals and objectives direct sanctuary activities, which address the dual purposes of resource protection and multiple uses, and are consistent with the intent of the NMSA.

Management strategies for the MNMS focus on the following goals and objectives.

Resource Protection

The NMSA authorizes the Secretary of Commerce, delegated to NOAA's ONMS, to manage sanctuaries' historical resources, among others. In doing so, the agency must comply with the Federal Archaeological Program as outlined in Executive Order 11593 and Federal statutes defined in the National Historic Preservation Act of 1966 (NHPA) and the Archaeological Resources Protection Act of 1979 (ARPA), as well as those acts' implementing regulations. The highest priority management goal for the MNMS is resource protection through comprehensive and coordinated conservation and management of the wreck and its surroundings. An important part of our Nation's history, the *Monitor*, its artifacts, the archaeological information at the site, the archaeological collection, and the *Monitor*'s records are all part of the sanctuary's resources.

Education and Outreach

Education and outreach will always be one of the most effective tools to protect and promote the MNMS. Jointly, education and outreach directly support resource protection by creating a better-informed public, not only on issues affecting the MNMS but larger ocean conservation issues as well. MNMS staff uses education to promote awareness and protection of the sanctuary's natural and cultural resources, and to enhance local, regional, and national knowledge of the surrounding ocean's ecological and historical significance.

Archaeological Research

Future archaeological work at MNMS, including inventorying, locating, documenting, assessing, managing, and interpreting the sanctuary's archaeological, historical, and environmental resources, will serve to better protect the sanctuary's resources and maritime landscape. This work will remain a major goal of the sanctuary.

Resource Monitoring

Effective management of MNMS requires a research program that addresses resource protection as well as other management issues. Initial research supported by NOAA was directed primarily toward protection through a comprehensive site characterization process that increased our understanding of *Monitor*'s remains and how they have been affected by natural deterioration and human activities. This research was critical to developing effective approaches to long-term management issues.

Current research goals for the sanctuary are to ensure the scientific recovery and dissemination of historical and cultural information from the site, and to preserve and manage the remains of *Monitor* in a manner that appropriately enhances both the significance and interpretive potential of the warship.

Additionally, resource monitoring programs will help sanctuary management better understand the living and natural resources within the sanctuary and in the surrounding waters.

USS *Monitor* Sailors

In 2002, NOAA and the United States Navy recovered the remains of two U.S. sailors lost on December 31, 1862, the night the *Monitor* sank. NOAA is working closely with the Navy and the Joint POW/MIA Accounting Command (JPAC) to try to identify these two servicemen. NOAA is leading the effort with genealogical research and facial reconstructions, and has named this project *Monitor* Crew Investigations. NOAA and the Navy hope to identify the two individuals and secure a proper burial at Arlington National Cemetery for these crewmen. This project intends to honor these two men and all who where lost the night the *Monitor* sank. It may also solve an important historical mystery about the identity of these two sailors.

Conservation

Between 1998 and 2002, NOAA and the Navy recovered almost 400 tons of material from the *Monitor*, including her revolving gun turret, engine, 11-inch Dahlgren guns, and thousands of smaller artifacts. These materials are currently being conserved in the Batten Conservation Laboratory at The Mariners' Museum. It is estimated that the total conservation process to treat all of the artifacts will take up to thirty years and many millions of dollars. Funding for this effort consists of a mix of public and private funds.

These artifacts, once treated, provide a permanent record of life aboard the ironclad USS *Monitor* and serve as national treasures. NOAA and The Mariners' Museum will continue to work together to assure these artifacts are properly conserved and archived. Conservation funding will continue to be a challenge; however, NOAA is investigating new ways to seek private dollars for conservation.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section identifies and summarizes how NOAA will accomplish the goals and objectives set forth in the statement of purpose and need. This section briefly describes the proposed action and alternatives that will fulfill the requirements of the purpose and need statement, and meet the purpose and policies of the NMSA, as well as fulfill the education, research, and other goals of ONMS and the MNMS. Two alternatives are considered in the PEA: Alternative 1, leaving the current management plan in place (No Action); and Alternative 2, revising the management plan to address the emerging issues described above (Proposed Action).

2.1. Alternative 1 - No action

Under the No Action alternative, NOAA would not update the MNMS Management Plan to fulfill the education, research, and management mandates of NMSA. This alternative would maintain the 1992 MNMS Management Plan and its nominal list of goals and objectives. Management actions described in the existing management plan, including educational and research activities and enforcement actions, would continue.

2.2. Alternative 2 - Proposed action

Under the Proposed Action, NOAA would revise the MNMS management plan, including: updating the sanctuary mission, goals, and objectives; removing completed tasks and incorporating new and planned management strategies and activities; laying out performance measures to better evaluate the effectiveness of sanctuary management; and laying groundwork for potential future actions to address high priority issues, such as those identified in the management plan. The proposed action is the preferred alternative.

3.0 AFFECTED ENVIRONMENT

The three Monitor National Marine Sanctuary environments that must be assessed for possible environmental impacts of the new management plan are: (1) the biological and physical environment; (2) the socioeconomic environment; and (3) the maritime heritage and cultural environment.

3.1 Biological and Physical Environment

The *Monitor*'s remains lie on the Continental Shelf 16.1 nautical miles south-southeast of the Cape Hatteras Lighthouse. The *Monitor* Sanctuary consists of a vertical column of water in the Atlantic Ocean one mile in diameter extending from the surface to the seabed. The center of the water column is 35°00'23" north latitude and 75°24'32" west longitude.

In the vicinity of the *Monitor*, the ocean bottom is composed of sand, shell hash, and clay below the surface. Bathymetric profiles (topography of the sea floor) of the area indicate that the bottom surface slopes gently away to the southeast at less than seven feet per 1000 feet.

Visibility. Visibility in the 230-foot-deep water varies according to turbidity, the presence of microorganisms, and the intensity and angle of sunlight. Records to date indicate that visibility varies from approximately 10 feet to more than 150 feet.

Currents. The site lies at the western margin of the Gulf Stream, and the area is influenced both by the Stream itself and by eddies created by that current. Changes in current direction and velocity occur frequently. Within a 24-hour period, direction has been observed to change 360 degrees. Current velocities are known to vary from zero to more than 1.5 knots at the bottom, and surface currents can be considerably stronger. Water temperature in the area seems to be related to these current patterns. While few specific data are available, temperature projections indicate an annual variation between 52 degrees and 78 degrees Fahrenheit.

Wind patterns. In the area of the sanctuary, wind patterns can be generalized as prevailing from the north to west between November and February; north-northwest and south-southwest between March and June; south-southeast during July and August; and north-northeast during September and October. However, unpredictable variations are common and spontaneous storms frequently occur.

Biological organisms. A biological study carried out by NOAA in June 1990, identified encrusting organisms and motile invertebrates on the wreck. The wide variety of encrusting organisms included coral, sponges, sea squirts, sea anemones, hydroids, barnacles, tube worms, mussels, and oysters (Dixon 1990).

The *Monitor*'s remains are located near the northern boundary of tropical reef fish habitat, and therefore support a mixture of temperate and tropical species. Fish abundance has been estimated by visual counts and verified from videotape from five transect lines over the length of the *Monitor*. Twenty-five species were observed. The most abundant species was the red barbier. Thousands of fish, approximately 1.5 to 5 inches total length, formed schools at the stern and throughout the center of the vessel. The predominant predator species was the greater amberjack. Fifty-four fish were counted when approaching the *Monitor*. Approximately half of the wreck was visible, so the number of jacks was estimated to be 108. Estimates of other common species included scad (several hundred); black sea bass (35); scup (14); bank sea bass (10); slippery dick (10); and vermilion snapper (6).

The *Monitor* has become a productive reef habitat. However, cold-water intrusions by the Labrador Current may limit its productivity. Several fish kills have been observed in the Cape Hatteras area since 1957. Reports indicate cold-water intrusion on the outer continental shelf may have contributed to the killing of red snapper and vermilion snapper. Most of the tropical species observed on the *Monitor* on past expeditions were juveniles or young adults. Significant changes in the numbers and types of fish, corals and sponges have been noted over the years. Variations in the environment and even changes in the condition of the *Monitor*'s hull have been suggested as possible explanations.

The *Monitor* is located near the zoogeographical boundary of temperate and tropical species. Fish abundance has been estimated by visual counts and verified from videotape from five transect lines over the length of the *Monitor*. Twenty-five species were observed and cataloged (Dixon 1990).

3.2 Socioeconomic Environment

Tourism. Due to its historic significance, *Monitor* is considered a national treasure. As such, it is an important driver for heritage tourism in North Carolina and Virginia. The Mariners' Museum in Newport News, Va., and the Graveyard of the Atlantic Museum in Hatteras, N.C., serve as primary repositories of *Monitor* historic artifacts and are important to the economic health of those associated coastal communities. The Mariners' Museum in Newport News, Va., saw an almost 200% increase in attendance in 2007, following the opening of the USS *Monitor* Center. Today the museum continues to benefit immensely from the display of artifacts recovered from the USS *Monitor* in the form of increased attendance and new positions created to support the facility, and the museum remains a major draw for regional tourism.

Similarly, the Graveyard of the Atlantic Museum in Hatteras, N.C., has benefited from the relationship with the sanctuary. The museum employees about a dozen people and has received almost 2.6 million dollars in direct support from the sanctuary. In 2011, the museum had an attendance of almost 80,000 visitors. In both cases, the impact of the sanctuary to local communities has been clear and positive.

SCUBA diving also has had a positive impact on the local economy and plays a significant part in driving heritage tourism. Thousands of divers come to the Outer Banks of North Carolina each year to dive the shipwrecks of the Graveyard of the Atlantic. This region is characterized by popular wreck diving magazines as one of the top wreck diving destinations in the world year after year. The *Monitor* attracts divers each year and is considered by many to be one of the "Holy Grails" of shipwrecks in U.S. waters. Divers who dive the *Monitor* spend thousands of dollars in equipment, food, and lodging within the local communities as part of these dive trips.

***Coastal Communities*.** Creating and supporting sustainable coastal communities is an overarching goal for ONMS. Methods of achieving this goal include promoting climate and ocean literacy at local, state, and national levels; establishing ocean observing stations; and providing useful scientific data, all of which can aid communities in effectively managing coastal and ocean resources, understanding climate change, and advancing effective long-term coastal and land-use planning.

Recreational Fishing. Additionally, the waters within and surrounding the MNMS are used by sport fisherman and charter fisherman. Fishing is permitted within the boundaries of the sanctuary, and many of the charter captains operate both fishing and SCUBA charter businesses. Recreational fishing is a significant economic factor in the local economy, supporting hotel and restaurant business, tackle shops, and charter operators. This activity is responsible for hundreds of millions of dollars of revenue to the local economy. Although the sanctuary has no data on what portion of that is driven directly by the presence of the MNMS, it is clear that the sanctuary regulations permitting fishing serve to support the economy rather than hinder it.

Over the years, the wreck has become covered in fishing line, monofilament, cables, and other types of fishing gear and marine debris. Some of this debris is the direct result of fishing activities on the wreck, while other material has drifted onto the wreck in the form of derelict fishing gear. Although some damage to the wreck has been attributed to fishing gear, either derelict or intentional, the primary source of most of the observable change to *Monitor*'s hull is likely the result of natural site formation processes.

3.3 Maritime Heritage and Cultural Environment

During the years since *Monitor* sank on December 31, 1862, its hull and contents have been slowly transforming from a ship of war to an archaeological site. *Monitor* sank at an offshore location where a hard seabed and strong currents have prevented the hull from becoming imbedded in a protective layer of sand and sediment. The inverted hull of *Monitor* rests on a nearly east-west orientation.

Monitor's present condition is the result of a number of factors, including damage that occurred at the time of sinking, natural degradation of material that has resulted from more than a century and a half of immersion in seawater, and damage from human activities, including recovery activities.

Major recovery work began with the propeller and a segment of the propeller shaft, which were recovered with assistance from the Navy in 1998. In 2000, NOAA and the Navy installed mechanical shoring under the raised portions of the port side of the wreck. In 2001, the steam machinery and associated components were removed from the wreck, and in 2002, the vessels' rotating gun turret and its contents were successfully brought to the surface.

Since the turret recovery in 2002, NOAA has continued to study the site. Areas of wood that were exposed during the large item recovery expeditions (1998-2002) have led to degradation of the wood components that were exposed during those expeditions. In more recent years, surveys on the site have revealed the additional loss of deck plating at the stern.

During a 2011 NOAA expedition to the site, researchers observed a build-up of modern marine debris; however, earlier accelerated deterioration of the site from recovery activities appears to have slowed.

It is clear that while natural and man-made processes will continue to affect the site, the site remains a valuable repository of significant archaeological information and historical material for the foreseeable future. Furthermore, the site is considered a gravesite and is listed as a National Historic Landmark.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1. Alternative 1 - No action

Under this alternative, the goals and objectives of the 1992 MNMS Management Plan would remain in place and unchanged. While the revision of a management plan does not, in of itself, enable the implementation of any particular strategy or activity, without the revision, the potential beneficial effects from the implementation of the revised management plan may not be realized because the overall management model would continue to be outmoded. The 1992 management plan does not reflect current archaeological preservation approaches that promote *in situ* preservation and consequently provide more stability for the associated natural habitat.

4.2. Alternative 2 - Proposed action

4.2.1 Biological and Physical Environment

Three proposed actions plans in the revised Monitor Sanctuary Management Plan have objectives that would be relevant to affecting changes in the biological environment. They are the Resource Protection, Education, and Resource Monitoring action plans.

Resource Protection:

- Encourage access to the wreck site, while promoting safe, responsible, and well-informed enjoyment of sanctuary resources;
- Ensure compliance with sanctuary regulations through education, monitoring, and enforcement, including the continued partnership with the U.S. Coast Guard for surveillance of the site and enforcement of sanctuary regulations, and work to increase ONMS presence on the water; and
- Ensure continued refinement of the access and permitting provisions of the *Monitor* management plan, based upon site conditions.

Education and Outreach:

- Build an education and outreach program that complements and promotes sanctuary resource protection and historical, climatological, and ecological research programs; and
- Increase ocean and climate literacy among local, regional, and national audiences.

Resource Monitoring:

- Establish and maintain a monitoring and research program of the MNMS's living resources and their habitats; and
- Establish and promote the sanctuary as an ocean observing station due to its unique location within an important area for biological productivity and climate change.

Taken together, NOAA expects that the strategies and activities included in the draft plan would have beneficial environmental effects, both directly by increasing protection of resources through interagency cooperation in management, including enforcement, and indirectly by increasing research and monitoring of the biological environment, and by reaching more people to expand the stewardship message of the sanctuary. These strategies and activities would result in improved information for management decisions and increased conservation and stewardship behaviors, respectively. The direct effect of the proposed action is expected to be increased attention to monitoring and characterizing of the biological environment. The 1992 management plan emphasized archaeological resources far more than biological resources. Increased focus on the biological environment would result in better information to develop further management approaches. The indirect effect of the proposed action would be that the wreck would return to a state of natural equilibrium following the cessation of recovery of major elements of the structure, as provided in the 1992 management plan. The impacts of the proposed action on the biological environment of the *Monitor* are not expected to be significant because the strategies and activities would have little to no potential to significantly affect the quality of the environment according to NEPA standards.

4.2.2 Socioeconomic Environment

Five proposed actions plans in the revised Monitor Sanctuary Management Plan have objectives that would be relevant to affecting changes in the socioeconomic environment. They are the Resource Protection, Education, Resource Monitoring, *Monitor* Sailors, and Conservation action plans.

Resource Protection:

- Encourage public access to the wreck site, while promoting safe, responsible, and well-informed enjoyment of sanctuary resources; and
- Enhance public awareness of sanctuary regulations and the permitting process.

Education and Outreach:

- Build an education and outreach program that complements and promotes sanctuary resource protection and historical, climatological, and ecological research programs;
- Increase ocean and climate literacy among local, regional, and national audiences; and
- Target user groups and underrepresented audiences for participation in sanctuary programs.

Resource Monitoring:

- Establish and promote the sanctuary as an ocean observing station due to its unique location within an important area for biological productivity and climate change.

Monitor Sailors:

- Enhance public education and awareness of personal stories and social history associated with human remains encountered within the sanctuary.

Conservation:

- Support efforts of The Mariners' Museum to increase its levels of funding for the conservation of USS *Monitor* archaeological artifacts;
- Work with The Mariners' Museum to establish additional outside partnerships for USS *Monitor* artifact conservation. This is expected to include the scientific, engineering, and mechanical communities; and
- Collaborate closely with museum conservation staff to increase the public visibility, knowledge, and support for the conservation of USS *Monitor* artifacts.

The proposed action would benefit the socioeconomic environment because enhanced attention to *Monitor* would increase cultural heritage tourism, including recreational diving experiences, in North Carolina and Virginia. Benefits to cultural heritage tourism would be accomplished through financial, exhibit, artifact, and program support to The Mariners' Museum in Newport News, Va., and the Graveyard of the Atlantic Museum in Hatteras, N.C. These facilities are important to the economic health of their respective local coastal communities. These facilities provide jobs and support local businesses. Education and outreach efforts (identified in the draft management plan under the Education and Outreach and *Monitor* Sailors action plans) would support greater awareness of heritage resources and the sanctuary system. Increased public awareness and knowledge would enhance the public's tourism experience and may result in improved conservation and stewardship behaviors. Increased tourism would also have negligible positive effects on the recreational fishing sector. Additionally, promoting ocean and climate literacy may help local communities better understand their connection to coastal and marine resources and how to adapt to climate change influences, such as sea-level rise, to aid in long-term coastal planning. The Resource Protection Action Plan would encourage public access to the wreck site while promoting safe, responsible, and well-informed enjoyment of sanctuary resources. This is expected to have a beneficial effect on the socioeconomic environment. The proposed action to revise the management plan would result in positive environmental effects, yet the impacts are not expected to be significant because the benefits of *Monitor* to the local communities in North Carolina and Virginia are already established. As a result, the beneficial effects would not meet the threshold for significance under NEPA standards.

4.2.3 Maritime Heritage and Cultural Environment

Six proposed actions plans in the revised Monitor Sanctuary Management Plan have objectives that would be relevant to affecting changes in the socioeconomic environment. They are the Resource Protection, Education, Archaeological Research, Resource Monitoring, *Monitor* Sailors, and Conservation action plans.

Resource Protection:

- Encourage public access to the wreck site, while promoting safe, responsible, and well-informed enjoyment of sanctuary resources;
- Enhance public awareness of sanctuary regulations and the permitting process;
- Ensure compliance with sanctuary regulations through education, monitoring, and enforcement, including the continued partnership with the U.S. Coast Guard

for surveillance of the site and enforcement of sanctuary regulations, and work to increase ONMS presence on the water; and
- Ensure continued refinement of the access and permitting provisions of the *Monitor* management plan, based upon site conditions.

Education:
- Build an education and outreach program that complements and promotes sanctuary resource protection and historical, climatological, and ecological research programs.

Archaeological Research:
- Characterize the sanctuary's maritime heritage resources;
- Scientifically monitor the sanctuary's maritime heritage resources to better understand existing and potential threats; and
- Develop and encourage collaborative research programs to meet the Monitor National Marine Sanctuary's on-going management needs.

Resource Monitoring:
- Establish and maintain a monitoring and research program to recognize, document, and track changes in the structural integrity of USS *Monitor* and associated artifacts.

Monitor Sailors:
- Pursue positive identification of known human remains and any additional human remains encountered within the sanctuary;
- Make recommendations to the U.S. Navy concerning the final disposition of human remains and personal effects;
- Follow established parameters for the care, conservation, portrayal, and display of human remains and personal effects prior to final disposition; and
- Enhance public education and awareness of personal stories and social history associated with human remains encountered within the sanctuary.

Conservation:
- Identify additional funds to support existing federal dollars allocated towards the conservation of USS *Monitor* archaeological materials;
- Support efforts of The Mariners' Museum to increase its levels of funding for the conservation of USS *Monitor* archaeological artifacts;
- Work with The Mariners' Museum to establish additional outside partnerships for USS *Monitor* artifact conservation. This is expected to include the scientific, engineering, and mechanical communities;
- Identify other conservation facilities and conservators to explore new techniques that might be applicable to the treatment of USS *Monitor* artifacts; and
- Collaborate closely with museum conservation staff to increase the public visibility, knowledge, and support for the conservation efforts on USS *Monitor* artifacts.

The proposed action would be beneficial to the maritime heritage and cultural environment of the *Monitor* and the sanctuary because it would enhance the protection and management of this national historic treasure and its artifacts by updating the management regime to shift from an artifact recovery model to an *in situ* preservation model. The existing management plan is over 20 years old and reflects an outdated management approach based on recovery of artifacts from the shipwreck. Many of the strategies and activities in the 1992 management plan have been accomplished. The proposed draft management plan is based on an *in situ* model of preservation, which views the shipwreck as part of the environment and assures the least impact on the site and the surrounding environment. The proposed strategies and activities would be beneficial to the maritime heritage and cultural resources of the MNMS because they would update the research, monitoring, management, and educational programs to reflect this new management model, which is more appropriate for the current issues facing the preservation and management of the sanctuary. The revised management plan would lead to greater protection and improved management of the wreck site and its artifacts. The effects of this action are not expected to be significant, according to the standards established under NEPA, because many artifacts have been recovered and are under protection, and the sanctuary has already promulgated regulations that further protect the site.

4.3. Comparison of Alternatives

Actions taken to manage the sanctuary as proposed in Alternative 2, considered together with the stressors facing sanctuary resources, generally result in a cumulative beneficial impact to these resources, although the impact is not expected to meet the threshold for significance under NEPA.

Alternative 1: No Action

Taking no action would result in no change of the current management regime of the sanctuary. The current management plan would remain in effect. Any future decisions made under the 1992 management regime would be reviewed for their NEPA compliance under either the existing environmental assessment or under a separate NEPA analysis before decisions would be made.

However, much has changed since 1992. The 1992 management plan pre-dates recovery of major sections of the wreck and pre-dates the development of the USS *Monitor* Center at The Mariners' Museum. The site itself has changed significantly, as has the management philosophy. For example, rather than a focus on recovery and artifact collection, the proposed action would support *in situ* monitoring and research. As a result, Alternative 1 could result in a negative impact to the site and its resources due to the outdated management model and changes that have taken place at the site since 1992.

Alternative 2: Proposed Action

The proposed action would revise the MNMS management plan to reflect changes in the management of the sanctuary without changes to existing regulations. If future

regulatory actions were initiated, the appropriate NEPA analysis and formal public input would occur at appropriate times in the future.

Although the revised management plan does not specifically enable any of the activities listed in the eight action plans to occur, activities could take place in the sanctuary under the current management plan without this revision (see Alternative 1: No Action). However, the revised management plan would update existing non-regulatory programs, call for new programs to be developed, and include a process to consider future expansion of the site. Taken together, NOAA expects that the strategies and activities included in the draft plan would have some positive environmental effects, both directly and indirectly by increasing protection of resources through interagency cooperation in research and management, and by reaching more people and expanding the stewardship message of the sanctuary.

4.4. Cumulative Impacts

This draft PEA analyzes the anticipated administrative and programmatic activities associated with the proposed action (Alternative 2) to revise the MNMS management plan. Administrative activities conducted within existing facilities, such as consultations, outreach, administrative frameworks, development of plans and guidelines, and data analysis would have little to no potential to significantly affect the quality of the human environment according to NEPA standards. Activities to manage the sanctuary as proposed in the draft management plan, considered together with the many natural and human-induced stressors to sanctuary resources, generally result in a cumulative beneficial impact to these resources. However, as with the administrative activities, the positive impacts do not meet the NEPA threshold for significance. This is because at a programmatic level, no single activity, when taken in consideration with others, would have significant beneficial or negative impacts on any individual or combined resource.

It is important to note that natural and human-induced stressors may somewhat lower the beneficial effects of implementing the proposed action. Such stressors include, for example: impacts of climate change, such as increased water temperatures and ocean acidification; major natural disasters, such as hurricanes; and major anthropogenic damage, such as oil spills and overfishing. However, the outcome of these external stressors is not expected to be altered significantly by the implementation of the proposed action. Therefore, cumulative impacts of this action are not considered significant under the NEPA.

Therefore, it is anticipated that the draft PEA on the draft revised management plan for MNMS would result in a Finding of No Significant Impact (FONSI). Accordingly, no environmental impact statement was prepared for the purposes of reviewing the draft management plan. This does not preclude NOAA from analyzing specific activities under NEPA and analyzing the potential for significant effects of an action and its alternatives in a future environmental assessment or environmental impact statement, as necessary, in the future.

5.0 LIST OF PREPARERS

5.1. National Oceanic and Atmospheric Administration

David Alberg, Superintendant, Monitor National Marine Sanctuary

Joe Hoyt, Maritime Archaeologist, Monitor National Marine Sanctuary

Paul Ticco, NOAA Office of National Marine Sanctuaries

Vicki Wedell, NOAA Office of National Marine Sanctuaries

6.0 REFERENCES

Dixon, R., Biology of the USS *Monitor*, NOAA Center for Coastal Fisheries and Habitat Research, Beaufort, N.C., 1990.